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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/716,609	11/20/2003	Balakrishnan Sridhar	605	7137
22474	7590	06/04/2007	EXAMINER	
CLEMENTS WALKER			DIACOU, ARI M	
1901 ROXBOROUGH ROAD				
SUITE 300			ART UNIT	PAPER NUMBER
CHARLOTTE, NC 28211			3663	
			MAIL DATE	DELIVERY MODE
			06/04/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/716,609	SRIDHAR ET AL.
	Examiner	Art Unit
	Ari M. Diacou	3663

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 20 February 2007.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 15-31 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 15-31 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO/SB/08)  
     Paper No(s)/Mail Date \_\_\_\_\_

4) Interview Summary (PTO-413)  
     Paper No(s)/Mail Date \_\_\_\_\_

5) Notice of Informal Patent Application  
 6) Other: \_\_\_\_\_

## DETAILED ACTION

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1-22-2007 has been entered.

### ***Response to Arguments***

2. In the remarks filed 1-22-2007, applicant argued the following:
  - A. On page 10, that the amendments to claim 15 overcome the indefiniteness noted by the examiner.
  - B. On pages 12-13, that while Ye's device is capable of performing the claimed limitations, Ye does not teach or suggest actually performing them.
3. Argument A is convincing, the 112P2 rejection is hereby withdrawn.
4. Argument B is moot in view of the new grounds of rejection, which has been necessitated by amendment.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 3663

8. Claims 15-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ye et al. (USP No. 6417965) in view of Kinoshita et al. (USPAP No. 2002/0001124) and further in view of Zahnly et al. (PGPub 2002/0176156).

- Regarding claim 15, Ye discloses An optical amplifying apparatus, comprising:
  - an optical amplifying device; [106 and 112]
  - a controlling device [234, 235 and 236] configured for operating said optical amplifying device in one of a gain threshold mode and a constant gain mode, said controlling device further configured for switching the optical amplifying device from operating in the gain threshold mode to operating in the constant gain mode when an absolute value of a gain error exceeds a gain threshold, wherein the gain error is a difference between a target gain and a gain of the optical amplifying device; and
  - a measuring device configured to measure an input power ( $P_{in}$ ) of the optical amplifying device, said measuring device also configured to communicate with said controlling device. [105]

but fails to disclose the power being measured from the input and output power, as well as the method of switching gains. Kinoshita teaches measuring both the output and input power and calculating/looking-up the gain on the fly [Fig. 5, #81, #82] [¶ 0074-0075]. Zhanley teaches

- switching gain from constant to threshold mode for a predetermined amount of time if a transient has been detected. [0049]

Therefore, it would have been obvious to one skilled in the art (e.g. an optical engineer) at the time the invention was made, to monitor the output and input, and switch from a gain threshold mode to a constant gain mode if it has been determined that no transients have occurred during an observation time, for the advantage of maintaining an acceptable gain of the optical amplifier.

- Regarding claim 17, the parent claim being rejected over Ye in view of Kinoshita above, or Ye in view of Kinoshita and Zhanley, Kinoshita further discloses:
  - a plurality of optical amplifier stages connected in series, wherein an input of a first optical amplifier stage is an input of said amplifying device; and [Fig. 13, #61-1 and #61-2]
  - one or more variable optical attenuators (VOA) connected in series with said optical amplifier stages such that each VOA receives an output of one optical amplifier stage and outputs to a next optical amplifier stage, wherein at least one VOA is controlled by said controlling device, [Fig. 13, #52]
  - wherein said measuring device is further configured to measure power levels on a plurality of points along a connected chain of said plurality of optical amplifier stages and VOAs. [Fig. 13, #75]
- Regarding claim 23, Ye and Kinoshita or Ye in view of Kinoshita and Zhanley, disclose the invention with all the limitations of claim 15 above, but in addition Ye Kinoshita teaches that a variable optical attenuator may be placed at the input 8 of any of the optical amplifier species disclosed in 2002/0001124 [¶ 0055].

Further Ye discloses in figure 1 that an indefinite chain of optical amplifier stages may be serially compiled to produce a viable transmission system. [Fig. 1, #18] [Col. 3, lines 30-67] Therefore, it would have been obvious to one skilled in the art (e.g. an optical engineer) at the time the invention was made, to place the optical amplifier of figure 5 of Kinoshita into module 18 of figure 1 of Ye thereby *comprising* the limitations of claim 23, for the advantage of creating a transmission link of a length that would necessitate a plurality of amplifier nodes.

- Regarding claim 16, the parent claim being rejected over Ye in view of Kinoshita above, or Ye in view of Kinoshita and Zhanley, Ye further discloses at least one of the gain threshold and the target gain are predetermined. [Col. 10, lines 11-16]
- Regarding claims 19 and 24, the parent claim being rejected over Ye in view of Kinoshita above, or Ye in view of Kinoshita and Zhanley, Kinoshita further discloses automatic level control being utilized. [Fig. 13, #51]
- Regarding claims 20 and 29, the parent claim being rejected over Ye in view of Kinoshita above, or Ye in view of Kinoshita and Zhanley, Ye further discloses the capability to deal with transient events [Col. 5, lines 4-16], but fails to mention a predetermined time to being response. Read broadly however, the examiner considers zero delay time to be a predetermined amount of time, since its designers had to determine that time before the device was built.
- Regarding claims 18 and 28, the parent claim being rejected over Ye in view of Kinoshita above, or Ye in view of Kinoshita and Zhanley, Kinoshita further

discloses a DCF with signal sampling being taken at the input and output of the DCF. [Fig. 13, #75]

- Regarding claims 22/26/31 and 27, the parent claim being rejected over Ye in view of Kinoshita above, or Ye in view of Kinoshita and Zhanley, the limitations provided in the claims are merely the definitions of the terms “transient event” and “VOA” commonly accepted in the art.
- Regarding claim 25, the parent claim being rejected over Ye in view of Kinoshita above, or Ye in view of Kinoshita and Zhanley, the lockout time while not mentioned in Ye, may be regarded as the response time of the circuit in figure 8B.
- Claims 22 and 31 are rejected as reading on Kinoshita’s teaching of ALC [0072].

### ***Conclusion***

9. While patent drawings are not drawn to scale, relationships clearly shown in the drawings of a reference patent cannot be disregarded in determining the patentability of claims. See In re Mraz, 59 CCPA 866, 455 F.2d 1069, 173 USPQ 25 (1972).

10. The references made herein are done so for the convenience of the applicant. They are in no way intended to be limiting. The prior art should be considered in its entirety.

11. The prior art which is cited but not relied upon is considered pertinent to applicant's disclosure.

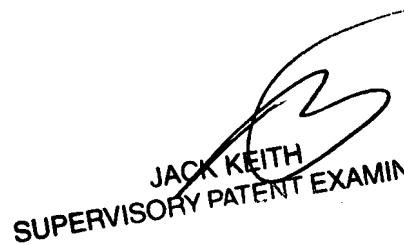
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ari M. Diacou whose telephone number is (571) 272-5591. The examiner can normally be reached on Monday - Friday, 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on (571) 272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Ari M. Diacou/

5/29/2007

  
JACK KEITH  
SUPERVISORY PATENT EXAMINER